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Abstracts

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Environmental and landscape rehabilitation: case study for fresh stone treatment on big dams

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Abstract

The construction of big dams usually cause a severe environmental change at a local level, producing a considerable visual impact that must be remedied and the disturbed area must be rehabilitated and recovered, approaching the landscape prior to the dam construction. In this work, several assays were tested, with the purpose of finding a treatment for fresh cut granite that could be used as a general rock treatment for visual impact of fresh excavated rocks. Some organic mixtures were tried, using autochthonous lichens and moss, as well as chemical treatments, like acid or paint. Granite blocks were selected and five different treatments were applied to cover the fresh granitic blocks and trigger their colonization and aging. The experiment has been established on two groups of blocks, one submitted to irrigation three times a week and the other without irrigation. Each treatment had two repetitions per group. Two blocks for control were also established in each group to interpret the gaps of variation in comparison to the treated blocks. All the stone blocks were maintained in a greenhouse, with controlled temperature and humidity. The monitoring of the treatment was done by taking pictures every 20 days, that were analyzed using RGB color characteristics and parameters that shows the evolution of pigmentation of the blocks. The results of this study show that three or at least two out of the five tested treatments are recommended to use in the disturbed areas. Irrigation can be more useful for the first two to three weeks after treatments.

Keywords: visual impact, quarrying, granite treatment, rock colonization, stone coloring.